IN THE CLAIMS

1-18 (Cancelled)

19. (Currently amended) A method for detecting protease activity in a sample solution comprising the steps of:

i) contacting the sample solution with a protease substrate labeled with an electrochemically active marker, wherein the electrochemically active marker is a metallocene moiety,

ii) providing conditions under which [[any]] a protease present in the sample solution may degrade the protease substrate, wherein the protease is capable of recognizing the protease substrate, and

iii) electrochemically determining information relating to the electrochemically active marker, thereby detecting the protease activity in the sample.

20. (Previously presented) A method as claimed in claim 19 wherein the information relating to the electrochemically active marker is determined using voltammetry.

21. (Previously presented) A method as claimed in claim 20 wherein the information relating to the electrochemically active marker is determined using differential pulse voltammetry.

22. (Previously presented) A method as claimed in claim 19 wherein the information relating to the electrochemically active marker is determined using an amperometric technique.

23. (Previously presented) A method as claimed in claim 19 wherein the information relating to the electrochemically active marker is determined using a technique that utilizes one or more electrodes that are functionally surrounded by a selectively permeable membrane.

24. (Canceled)

25. (Currently amended) A method as claimed in claim [[24]] 19 wherein the electrochemically active marker is a ferrocene moiety.

26. (Previously presented) A method as claimed in claim 19 wherein the electrochemically active marker is attached to the protease substrate through a linker.

27. (Previously presented) A method as claimed in claim 19 wherein each protease substrate molecule is, on average, labeled with more than one electrochemically active marker molecule.

28. (Previously presented) A method as claimed in claim 19 wherein the protease substrate labeled with an electrochemically active marker is a single amino acid labeled with an electrochemically active marker.

29. (Previously presented) A method for detecting a disease in a subject the method comprising the method of claim 19 further comprising a step of comparing said protease activity with a level of protease activity that is diagnostic of a disease in a subject, thereby detecting a disease in a subject.

30. (Previously presented) A method for detecting a pathogen the method comprising the method of claim 19 further comprising a step of comparing said protease activity with a level of protease activity that is diagnostic of the presence of a pathogen, thereby detecting a pathogen.

31. (Previously presented) A method for screening for a protease inhibitor the method comprising the method of claim 19 further comprising a step of contacting the sample solution with a putative protease inhibitor.

32. (Withdrawn) A protease assay kit comprising a protease substrate labeled with an

electrochemically active marker.

33. (Withdrawn) An apparatus for detecting protease activity in a sample solution, the apparatus comprising a means for contacting the sample solution with a protease substrate labeled with an electrochemically active marker, a means for providing conditions under which any protease present in the sample solution may degrade the protease substrate, and a means for electrochemically determining information relating to the electrochemically active marker, wherein the means for electrochemically determining information relating to the electrochemically active marker is selected from the group consisting of a voltammeter, an amperometer, and one or more electrodes that are functionally surrounded by a selectively permeable membrane, wherein the electrochemically active marker is a metallocene moiety, wherein the electrochemically active marker is attached to the protease substrate through a linker, and wherein the protease substrate labeled with an electrochemically active marker is at least a single amino acid labeled with an electrochemically active marker.

34. (Withdrawn) A compound of formula IV,

$$Mc\text{-}NR'\text{-}C(=O)\text{-}X\text{-}(Ar)_n\text{-}(L)_m\text{-}R \qquad IV$$

wherein

- Mc is a metallocenyl group in which each ring may independently be substituted or unsubstituted,
- the metallocenyl group comprises a metal ion M selected from the group consisting of iron, chromium, cobalt, osmium, ruthenium, nickel, and titanium,
- R' is H or lower alkyl,
- X is NR' or O,
- Ar is a substituted or unsubstituted aryl group,
- n is 0 or 1,
- L is a linker group,
- m is 0 or 1, and

- R is a protein, a peptide, or an amino acid residue.

35. (Withdrawn) A compound comprising a metallocenyl group attached to a carboxyl group of molecule, the molecule selected from the group consisting of an amino acid residue, a peptide, and a protein.

36. (Withdrawn) A compound as claimed in claim 35 having formula V,

$$Mc\text{-}(CH_2)_n\text{-}X\text{-}R \qquad V$$

wherein

- Mc is a metallocenyl group in which ring may be independently be substituted or unsubstituted,
- the metallocenyl group comprises a metal ion M selected from the group consisting of iron, chromium, cobalt, osmium, ruthenium, nickel, and titanium,
- n is 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, or 12,
- X is NR' or O,
- R' is H or lower alkyl, and
- R is a protein, a peptide, or an amino acid residue.